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Center for Social Organization of Schools

Report No. 214
July 1976

HIGH SCHOOL CONTEXT, COLLEGE QUALITY, AND EDUCATIONAL ATTAINMENT: INSTITUTIONAL CONSTRAINTS IN EDUCATIONAL STRATIFICATION

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The Johns Hopkins University

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Introductory Statement

The Center for Social Organization of Schools has two primary objectives: to develop a scientific knowledge of how schools affect their students, and to use this knowledge to develop better school practices and organization.

The Center works through three programs to achieve its objectives. The Schools and Maturity program is studying the effects of school, family, and peer group experiences on the development of attitudes consistent with psychosocial maturity. The objectives are to formulate, assess, and research important educational goals other than traditional academic achievement. The program has developed the Psychosocial Maturity (PSM) Inventory for the assessment of adolescent social, individual, and interpersonal adequacy. The School Organization program is currently concerned with authority-control structures, task structures, reward systems, and peer group processes in schools. It has produced a large-scale study of the effects of open schools, has developed the Teams-Games-Tournament (TGT) instructional process for teaching various subjects in elementary and secondary schools, and has produced a computerized system for school-wide attendance monitoring. The School Process and Career Development program is studying transitions from high school to postsecondary institutions and the role of schooling in the development of career plans and the actualization of labor market outcomes.

This report, prepared by the School Process and Career Development program, examines the consequences on educational attainment of attending high social status high schools and more or less selective colleges.

High School Context, College Quality, and Educational Attainment: Institutional Constraints in Educational Stratification

ABSTRACT

Does where one goes to college depend upon the kind of high school attended? And, what are the consequences of attending a more or less academically selective college or university? These questions are evaluated separately for college men and women using longitudinal data from a national sample of youth who were high school sophomores in 1955. For males, but not females, the social status composition of high school was found to enhance one's prospects for attending a selective institution of higher education. Selectivity, in turn, had total salutary effects on educational attainment, despite its depressant effect on grade performance and academic self-conceptions in college.

High School Context, College Quality, and Educational Attainment:
Institutional Constraints in Educational Stratification

This paper examines the role of institutional contexts in the educational attainment process, with special reference to the transition from high school to college. Employing longitudinal survey data for a national sample of youth, we evaluate the relative importance of student background and high school characteristics, particularly the school's status composition, in providing access to select colleges and universities and the subsequent educational consequences of attending postsecondary institutions of varying levels of selectivity.

In a recent study, Karabel and Astin (1975) persuasively argue that access to post-secondary schooling must be defined not only in terms of whether one goes to college, but also where one goes to college. For at least the last two decades, concern over equality of opportunity has produced an abundance of research on the retention or attrition of students in the transition from high school to college. That the question of "Who goes to college (and why?)" underlying this body of research remains of considerable policy interest is reflected in the Commission on Human Resources' publication of a sequal (Folger, Astin, and Bayer, 1970) to Wolfle's (1954) now classic review of talent loss in the transition from school to college. However, in contrast to the extensive literature on retention and attrition and the rapidly accumulating evidence on the consequences of attending institutions of varying quality (Alwin, 1974; Feldman and Newcomb, 1969; Folger, Astin, and Bayer, 1970; Sewell and Hauser, 1975; Sharp, 1970; Solmon and Taubman, 1973; Solmon and Wachtel, 1975;

Spaeth, 1968a; 1968b; 1970; Wegner and Sewell, 1970), relatively little is known about the process by which the college-going population is sorted among institutions of higher education.

This is an especially salient concern in view of changes over the past generation in the demand for college and in the structure of post-secondary education. The extension of educational opportunities has resulted in not only a tremendously expanded student population, but also in one substantially more heterogenous in background, preparation, needs, and interests than previous cohorts of college students. In response to these enrollment trends, colleges and universities themselves have become more diversified and specialized (Alwin, 1974; Karabel and Astin, 1975; Solmon and Wachtel, 1975).

The importance of differences among colleges for educational attainments deserves careful consideration. For example, it has sometimes been contended (Karabel, 1972, Clark, 1960) that two year junior and community colleges, which have evidenced remarkable growth over the last decade, serve primarily to legitimate inequality and failure rather than to promote socioeconomic opportunities for segments of the population previously excluded from college. The analytic issues here are two-fold: by what criteria are students selected into institutions of higher education that differ among one another in important respects; and, what are the consequences, educational or otherwise, of attending such different institutions? Propositions such as the above on the role of colleges and universities in perpetuating inequalities make assumptions about both processes governing selection into college and the impact of colleges upon their clients, yet rarely have both issues been considered simultaneously.[1]

Institutional selectivity, a measure of a college's ability to attract highly able students, appears to be a particularly important

dimension of the college environment. It and college affluence (or the cost of attendance) have been characterized as "...probably the two most representative measures of the total resources of higher education institutions " (Karabel and Astin, 1975: 385). Moreover, selectivity has been found to have modest enduring consequences for a range of educational outcomes and socioeconomic achievements (see citations above). Previous research on how students are sorted and selected among post-secondary institutions of varying quality has focused exclusively on the role of individual student attributes. Karabel and Astin, for example, found student aptitude and high school performance to be by far the student traits most strongly related to enrollment in select colleges and universities, with the unique effects of race, sex, and status origins much less consequential. We too will consider the importance of various individual student characteristics in this regard, but, more importantly, will also explore the role of institutional contexts in the transition from school to college and the effects of such contexts on later outcomes.

Our central thesis is that high schools, by virtue of school-to-school differences in the status origins of their students[2] arising from patterns of residential segregation[3], may differ appreciably in the types of colleges attended by their graduates. More specifically, it is assumed that middle-class high schools are characterized by organizational structures and normative climates[4] oriented toward college placement, which has both short and long run effects for subsequent educational attainments. Such high schools not only differentially prepare students for college, but also for colleges of different quality, which, in turn, independently

contributes to their later attainments. This progression from one institutional environment to another, should it be realized, thus may constitute an important mechanism for class cohesion and status maintenance in college-oriented communities.

Some years ago, James Conant wrote a provocative but, as it turns out, largely ignored essay entitled Slums and Suburbs (1961) in which he argued that an overriding concern of parents in wealthy suburbs was for their children to obtain admittance to a "top-flight" college. The public schools in these communities, Conant thought, were as good as the professionals knew how to make them and probably as good as most private secondary schools. The emphasis was not simply on preparing students for college, but on getting them into a prestige college on the assumption that, since college was becoming universally available for almost anyone who wanted it, where one attends college may become no less important than going. Unfortunately, Conant had no hard evidence to test these propositions and no one to our knowledge then or since has examined the central question, i.e., whether or not middle-class schools actually succeed in placing their students in more selective institutions, apart from other advantages their students hold.

This, then, is the major substantive question of the present inquiry. Using longitudinal data, we will assess the implications of where students go to high school for where they go to college and, in turn, the effects of college selectivity on educational attainment, controlling for sex, individual family background status, ability, school curriculum, and academic performance both in school and college.

The Model

Our substantive model is presented schematically in Figure 1. The seven exogenous variables include both individual level and high school contextual measures of socioeconomic status and ability. Although Conant's thesis pertains only to community and school status characteristics, our previous work (Alexander and Eckland, 1975a) suggests that ability and status dimensions of student body composition should be distinguished in research on the schooling process. Since these two measures of school context are themselves positively related but generally impinge upon school outcomes in opposite ways, failure to control for one in evaluating the effects of the other may underestimate either's importance. Hence, both ability and status context are included in the present inquiry even though the relationship of high school status composition to college selectivity is our immediate concern.

-----Figure 1 About Here-----

Measures of curriculum enrollment (college preparatory versus all others) and class standing (grade performance) during the senior year of high school appear next in the model. These are portrayed as dependent upon prior background and school variables and are antecedent to all college outcomes. Since college preparatory enrollment and high class standing are known to enhance the likelihood of college attendance, they may also be instrumental in providing access to select postsecondary institutions.[5] In our earlier research at the high school level (Alexander and Eckland, 1975a) both class standing and curriculum were modestly affected by the school's ability and status composition. Should these results maintain for our subsample of college-goers, then the status

context of the high school may affect college selectivity in part through its consequences for the kinds of academic credentials secondary students acquire.

The dependency of college selectivity upon this entire set of background and high school variables is assessed next. Here we will consider the role of both individual and institutional characteristics in providing access to select colleges and universities. Conant's hypothesis implies that attending a high status secondary school will enhance one's prospects for enrollment in a select college, even net of whatever other advantages students in such schools might enjoy in terms of their own socioeconomic origins, aptitude, academic achievement, and so forth.

The remainder of the model represents a simple specification of college-level achievement processes.[6] Freshman year grade-point average and anticipated major are considered first. The latter represents the distinction between "high" and "low" performance career choices employed in Davis' (1966) study of the campus as a "frogpond," in which he argued that attendance at academically select colleges should actually depress career goals somewhat. This expectation is derived from a relative deprivation model of career decision-making. For students of comparable ability, those competing against more able counterparts will generally perform relatively less well (i.e., obtain lower G.P.A.'s). Since career aspirations are tempered at least in part by self-assessments of one's capabilities, this depression of grade-point averages should itself serve to lower goal levels. Hence, college selectivity, through its immediate consequences for academic achievement, indirectly may impinge upon other

outcomes of schooling.

Although such "frogpond" effects have been found to obtain in both secondary and postsecondary institutions, offsetting advantages of attendance at select schools have also been noted (Alexander and Eckland, 1975a; Davis, 1966; Drew and Astin, 1972; Meyer, 1970; Reitz, 1975; Spaeth, 1968a; 1968b; 1970; Nelson, 1972; Werts and Watley, 1969). As our model suggests, we will consider here both the specific propositions of the "frogpond" phenomenon as well as other possible effects of college selectivity, especially its consequences for eventual level of education.

An index of self-conceptions of academic competence follows the measures of freshman year GPA and anticipated major, and all three of these are allowed to operate upon the senior or terminal year counterparts to the two freshman variables (i.e., actual college major and cumulative GPA). Based on Davis' "frogpond" model, college selectivity should lower self-conceptions of academic competance and incline students somewhat towards low performance career choices through its depressant effect on freshman GPA. Although the magnitude of these effects is unspecified in Davis' formulation, we would expect them to be rather modest. Moreover, it is unclear what, if any, residual direct effects of selectivity should be anticipated, except with regard to level of education which is the final outcome of the model.

In light of the research cited earlier, the overall effect of selectivity upon educational attainment should be positive. That is, attendance at select institutions should promote school retention and higher levels of educational certification. We will be particularly interested, however

in the extent to which this benefit might be masked by the "frogpond" process which suggests rather that selectivity should depress at least certain intervening outcomes. Hence, any direct selectivity effect on level of attainment would have to offset these countervailing tendencies.

Finally, the two-step linkage between high school status composition and educational attainment through college selectivity will also merit special attention, since it speaks to the major analytic issue of this inquiry: What educational advantages (or liabilities) accrue to students by virtue of their secondary school's ability to situate its graduates in select colleges and universities? As noted earlier, such institutional effects, if pronounced, would have important implications for equality of access to postsecondary schooling.

METHODOLOGY

Sample

The analysis is based on data for the subsample of youth in a fifteen year longitudinal study of high school sophomores first surveyed in 1955 and followed-up in 1970 who reported attending college and for whom usuable information is available for all variables in the substantive model discussed above. There were 869 youth in our sample of 2077 who reported having pursued an academic course of study in either a two year community college or a four year college or university. Respondents whose postsecondary schooling was restricted to either technical/vocational training or non-academic coursework in an academic degree-granting institution were excluded. Our usable sample was reduced by another 28 percent due to missing data on one or more of the variables required for study. The final sample for the present analysis consists of 630 respondents, 356 men and 274 women. Our results will be presented separately by sex.

The data set is part of a 1955 survey of public high school students conducted by the Educational Testing Service and a follow-up conducted by the Institute for Research in Social Science in 1970. The nationally representative sample originally included all seniors in 516 schools and all sophomores in 97 of these. The 1955 survey consisted of two major sections: a twenty item test of academic aptitude, measuring both verbal and mathematical ability, and a relatively brief student questionnaire.

The 1970 EEO follow-up survey was restricted primarily to the national sophomore sample. Students constituted the basic sampling units. These were stratified by region and size, and to some extent by parental education, group test scores, and school dropout and college-going rates. The targetted sample consisted of 42 schools with 4,151 sophomores from all regions. More detailed descriptions of the EEO schools (Eckland and MacGillivary, 1972) and sampling procedures (Alexander and Eckland, 1973) are available elsewhere.

Variable Measurement

In order to minimize sample attrition due to missing data on different items, procedures were employed for estimating missing data whenever it appeared empirically and logically sound to do so. Although the extent of missing data on individual items was generally moderate, usually in the 2-5 percent range, there was considerable independence in their occurrence across items and respondents.

While no single strategy was relied upon exclusively, the procedure usually entailed assigning scores, when possible, from a comparably worded item from the same or a different schedual, e.g., father's education was included in both the 1955 and 1970 questionnaires. A comparison of means, standard deviations, inter-item correlations and parallel analyses with and without missing data estimates revealed no notable estimation biases. These procedures and their evaluation are reported elsewhere (Alexander and Eckland, 1973:92-7).

1. Family Background Status. The effects of four status background variables are examined in the analysis. Except for some missing data

estimates, all were obtained from the 1970 schedule:

A. Mother's and Father's Education: a set of nine pre-coded response categories ranging from "none, or some grade school" to "Ph.D. or professional degree"; these levels of certification were rescaled into years of schooling.

B. Father's Occupational Status: an open-ended item pertaining to father's occupation "while you were in high school" and assigned scores on Duncan's SEI scale.

C. Acquisition Index: a factor weighted index of possessions in the respondent's high school household, using Maxwell's weighting scheme (Maxwell, 1971). The initial set of 22 household commodity items in the questionnaire was reduced to 13, with a scale reliability coefficient of .83.

2. Academic Aptitude. Aptitude was measured with an untimed, twenty-item test administered by ETS during the 1955 survey, with an estimated reliability of .82 (Stice and Ekstrom, 1964).

3. Senior Year Class Standing. Senior class standing is based on a quintile ranking obtained from school records in 1959 (Stice and Ekstrom, 1964).

4. Senior Year Curriculum Enrollment. A curriculum enrollment item was included in the 1970 questionnaire. Responses were dichotomized into college preparatory versus all other categories.

5. Contextual Variables. Aggregate school-level measures of aptitude and status background were computed on the ETS test of academic aptitude and an item from the 1955 schedule regarding father's education.

The latter is the only "family status" variable for which usable 1955 data were available. Both aggregate measures are based on data for EEO respondents and non-respondents (i.e., all sophomores in EEO schools included in the original ETS study.)

6. College Selectivity. College selectivity scores have been assigned to the first undergraduate institution attended using Astin's Estimated Selectivity Level index. Selectivity is defined as "the total number of highly able students who want to enroll at the college divided by the number of freshmen admitted. Thus, the greater the number of these bright students who apply, relative to the number admitted, the more 'selective' the institution can be" (Astin, 1965:55). Operationally, selectivity scores were computed as the ratio of National Merit Scholarship finalists, semi-finalists and recipients of the Letter of Commendation who named a given school as one of their two preferred colleges to the freshman enrollment in the Fall of 1961 (Astin, 1965: 25). Since Astin's scores were for 1961, these values are only slightly outdated for those spohomores in our sample who entered college immediately following high school graduation (1957). We suspect that there would be very little change in college ranks over such a short period.

A sizable number of our respondents attended either junior colleges or four year institutions which were not included in Astin's ranking; consequently, selectivity scores could not be directly assigned in these cases. Average aptitude scores within college selectivity categories within our sample were used to determine the placement of these non-coded types on the Astin scale. The average aptitude score for students attending four year colleges not ranked by Astin was 8.74 (76 cases);

for junior college students the average aptitude score was 7.87 (100 cases); and, for those attending "other unlisted colleges," it was 7.46 (50 cases). The first of these corresponds quite closely to the average aptitude of students in the lowest Astin category, which, for the 59 students attending schools with an Astin rank of 37, was 8.68. Thus, all students attending unranked four year colleges were assigned scale values of 37.

That students in junior and community colleges in our sample evidence somewhat lower levels of academic ability and achievement on the average than do their counterparts in four year institutions is consistent with enrollment patterns nationally (American College Testing Program, 1972; Folger, Astin, and Bayer, 1970; State Council of Higher Education for Virginia, 1966). For example, data for 55,702 1970-71 college freshmen participating in the ACT Assessment Program indicate that students in colleges offering a two-year program of study average from about a fifth to one full standard deviation below students attending various types of four year colleges and universities on the ACT composite score, an estimate of "overall academic ability" (ACTP, 1972:3). In our data these students scored about one-fourth of a standard deviation below those attending schools with an Astin rank of 37 on our ability test. Drawing upon this as our best estimate of the selectivity of their colleges, students attending two-year colleges and "other unlisted colleges" were assigned selectivity scores about a fourth of a standard deviation below 37, or a value of 35. Although this procedure disregards qualitative distinctions among the institutions grouped within these categories, we nevertheless expect that their placement relative to institutions actually ranked by Astin is reasonably accurate, with most errors being, if anything,

conservative vis-a-vis the hypotheses under consideration.

7. Freshman and Cumulative Grade-Point Averages. Grade point averages were obtained from the 1970 schedule. A ten category precoded scale was provided with categories ranging from "A or A+" to "D or less" in half grade intervals. Both letter grades and numerical grade point averages (based on a "0" to "4.0" scale) were associated with each response category.

A substantial number of college dropouts failed to provide cumulative GPA's, probably thinking that this item did not pertain to them, but did provide "terminal year" GPA's which also were requested. In order to maintain as many dropouts in the analysis as possible, cumulative GPA's were estimated as follows: when non-respondents reported only three semesters or less of college enrollment, freshman GPA was also used as the cumulative G.P.A.; when attendance extended beyond three semesters, freshman year and terminal year GPA's were averaged when both were available.

8. Freshman and Terminal Year College Major. Items in the 1970 schedule asked for the academic major that, as freshmen, the respondents eventually intended to pursue and their actual senior or terminal year major. These responses were divided onto "high performance" and "low performance" choices corresponding to Davis' dichotomy (1965: 7-11; 1966). The following majors were included in the low performance category: agriculture; business; education; home economics; nursing; physical education; and "other" majors. The following were designated "high performance career" majors: the arts and humanities; the biological sciences; the physical sciences; the social sciences; engineering; dentistry; law;

and medicine.

With but one exception, engineering, this classification conforms to that employed by Davis. The distinction between "high" and "low performance" career choices is based upon the academic competencies of the students typically attracted to a given major. The only marked difference in the distribution of student abilities across majors between Davis' respondents and ours occurred for engineers, who were well above the average ability level in our sample. For this reason engineering was designated a "high performance career choice." Our results for engineers are consistent with those for almost every pertinent study reviewed by Feldman and Newcomb (1969).

A procedure similar to that just described for cumulative GPA was employed to retain college dropouts for analysis. Those enrolled in college four semesters or less who did not indicate a terminal year major were assigned their freshman year preference as their final year major.

9. Academic Self-Concept. A factor weighted self-concept scale was constructed according to Maxwell's (1971) weighting scheme. Five pertinent items from the 1970 schedule were subjected to a principal components factor analysis. Through selection of items with factor-loadings below .40, a three item scale was constructed with an estimated reliability of .74. The items pertained to perceived difficulty in "learning how to study" and in "keeping up with my grades" and to "lack of adequate preparation (in high school) for college."

Reliance upon retrospective data for self-conceptions of competence during the college years is, of course, problematic. In particular, it

might be suspected that such data would inflate the association between self-conceptions and attainment outcomes. Actually, the zero-order correlation between the index and level of educational attainment is only .16. Hence, the modest importance of self-conceptions to be reported may be, if anything, overly generous.

10. Educational Attainment. This was measured with the same set of categories reported for the parental education items.

Analysis

Multiple regression and path analysis will be our basic analytic techniques. The coefficients to be presented may be interpreted as net, standardized effects. Due to considerations of space, metric coefficients will not be reported. The implications of metric comparisons for our conclusions regarding sex differences are, however, virtually identical to those suggested by the standardized parameters. The techniques and assumptions of path analysis and structural equation modeling are available in a number of sources (Alwin and Hauser, 1975; Duncan, 1975; Duncan, 1966; Heise, 1969; Land, 1969; Finney, 1972) and need not be recapitulated here.

RESULTS

Our model presupposes that high schools differ from one another in the manner in which their graduates are allocated among more or less select colleges and universities and, perhaps to a lesser extent, in the levels of educational certification their graduates typically obtain. It is further assumed that these differences from school to school are attributable not only to individual differences among students but also to differences between schools in their status composition. The patterns of college attendance and levels of educational attainment for the youth in our sample are consistent with these expectations, although, as has been found repeatedly in the school effects literature, the differences in outcomes between high schools are not dramatic.

The average selectivity of the colleges attended and level of educational attainment for graduates of the various high schools in our sample are summarized in Table 1. The school and student standard deviations for each outcome also are presented. The variability among school means in college selectivity is about half as great as that among individual students. This implies rather marked differences from school to school, and indeed this is reflected in the broad dispersion of school averages in Table 1.

----Table 1 about here----

High schools are substantially less varied in the average educational attainments of their college-going graduates. Here mean school attainments are only about one-fourth as variable as are student attainments. Nevertheless, the differences in school averages are still sufficiently

large to warrant consideration. For sixteen of the forty-two high schools the average graduate who goes to college receives at least sixteen years of education (or the equivalent of a B.A. degree). The average college-goer from the remaining twenty-six high schools terminates his or her formal schooling before completion of a baccalaureate program. For four of the twenty-six this is as early as the second year of college.

These differences in the school to school variability of outcomes also are obtained (as they should be) when the selectivity and education variances are decomposed into their within and between school components. Approximately one-fourth of the total variance in college selectivity is situated between high schools in our sample (25.2 percent to be exact). For educational attainment the corresponding figure is 7.5 percent. These values establish upper-bounds on the extent to which any and all other differences between schools might contribute to such outcomes.

We have hypothesized that the socioeconomic status composition of high schools will be particularly salient in this regard. Indeed, about 7.7 and 2.0 percent of the total variance in selectivity and educational attainment, respectively, are accounted for by our two measures of student body composition, i.e., school status and ability context (in each instance here the effect of ability context is negligible and non-significant). These represent about 30 and 27 percent, respectively, of the between school variance in selectivity and attainment. Thus, while it is clear that our model will not provide a comprehensive accounting of the between-school variability in these educational outcomes, it nevertheless does tap quite relevant institutional characteristics. We will now consider

the model itself and its informative value for assessing access to post-secondary institutions of varying selectivity and the dynamics of college attainments.

As noted earlier, separate estimates of the model's parameters will be presented for men and women. Although covariance analysis revealed the processes under consideration to be generally quite similar for both sexes, a few notable differences were of sufficient substantive interest to warrent reporting the analysis separately by sex. To avoid undo repetitiveness, however, we will consider first in some detail the estimates for males (which are based on a somewhat larger sample) and then note at the end of this section the important respects in which the results obtained for women differ.

The standardized parameters, for males, for the model presented in Figure 1 are reported in Table 2. The entries in Table 2 probably merit brief explanation. We have employed Alwin and Hauser's (1975) algorithm for decomposing total effects (Finney, 1972; Lewis-Beck, 1974) into their direct and indirect components. Each row of the table presents the parameters for an estimated equation. The first row for a given dependent variable is its reduced form equation (for two variables, high school rank and class standing, this is the only equation implied by the model). These equations estimate the total effects (i.e., sum of direct effects and all effects mediated through intervening variables) of exogenous variables. Subsequent equations for a dependent variable add intervening endogenous variables in the sequence implied by the flow of influence portrayed in the model. Consider, for example, the fourth row of Table 2. Here high school curriculum and class rank have been added to the reduced form

selectivity equation of row 3. The parameters for these two intervening variables are their total effects on college selectivity and the changes in exogenous coefficients from row 3 to row 4 reflect the mediation of influence through variables newly added to the equation. Thus, this method of sequential estimation identifies the total effects of variables and the mechanisms through which antecedant influences are mediated. The six equations for educational attainment, our terminal outcome, reflect the six stages or levels of influence in the system.

One further feature of Table 2 deserves mention. The aggregated effects of mother's education, father's education, the acquisition index, and father's occupation are reported in the column labeled "SES." These are "sheaf" coefficients (Heise, 1972), representing the gross impact of the set of four status origin indicators. They may be compared directly with other standardized effects in the model. It must be emphasized, however, that these parameters are merely alternative representations of the disaggregated effects of the separate status indicators.

With these explanatory remarks in mind, we now consider the analysis reported in Table 2, moving down the table rows (or, equivalently, from left to right in the diagram). The results for high school class rank and curriculum enrollment are quite consistent with our earlier work at the secondary school level (Alexander and Eckland, 1974; 1975a; 1975b). Curriculum placement is affected about equally by academic aptitude and status origins (although only one of the four separate status indicator effects is significant), and less so, but still significantly, by high school status (SES) context. Academic ability is by far the major determinant of class rank identified in our model. In view of the frequent

assertions of status biases in the evaluation of academic performance it may once again be worth noting that high school class standing is unaffected by status origins once other background variables are controlled. Similar results are reported in almost every recent inquiry to have systematically considered this matter (Alexander and McDill, 1976; Hauser, 1971; Hauser, Sewell, and Alwin, 1976).

One of our major substantive concerns is addressed next, the dependency of college selectivity upon background and high school variables. The coefficients of determination obtained for the reduced form and structural equations, .179 and .244 respectively, are substantially lower than that obtained by Karabel and Astin, .479 (1975: 392-393). This large difference apparently arises from the overwhelming importance of measured ability in their analysis. Their zero-order selectivity-student ability correlation was .65, considerably higher than our value of .285 for males (.238 for women).

Several factors may contribute to this discrepancy. It may partly reflect changes in college admissions criteria over the ten or so years separating the two studies, suggesting that test scores have become increasingly important. It may also be a consequence of Karabel and Astin's use of NMSQT, SAT, and ACT scores as indicators of measured ability, which are the tests directly employed in college admissions. Additionally, differences in research design and their implications for the relationships between test scores and institutional selectivity may be relevant to the discrepancy. Let us expand on this last point.

The EEO survey sampled high school students who subsequently were

dispersed among a large number of colleges, with relatively few attending any given school. The Karabel and Astin data, on the other hand, are based on a sample of college freshmen, with all (or at least most) such students in attendance at a given institution being included in the survey.

Assuming that the selectivity of an institution is rather stable over time and that there is a reasonably high correlation between a school's academic reputation among highly able youth and its ability to actually enroll such youth (which is what is implied by Karabel and Astin's results), then one would expect the relationship between student ability and institutional selectivity to be at a maximum in the Karabel-Astin research design. Since they exhaustively sampled college freshmen, the average ability level of their respondents within schools would likely be a reasonably good approximation of the actual competancy of the student body, which itself should be a reasonably good proxy for the college's selectivity.

In contrast, the "estimates" of institutional selectivity derived from our students would correspond rather poorly to the true school values--we have sampled high school rather than college students, and a relatively small number of them at that. Hence, the few students in our sample attending a particular college, given their likely non-representativeness vis-a-vis their same college peers, will not reproduce accurately any institutional characteristics. Our results, then, must be interpreted cautiously as applying to the educational careers of a sample of high school students, who might not represent well any particular cohort of college students.

In this regard it might be mentioned that analysis of the Project

Talent data on the relevance of thirty-nine characteristics of students and of their high schools for graduation from more or less select senior colleges produced proportions of explained variance quite similar to those reported here, .179 for men and .173 for women (Folger, Astin, and Bayer, 1970: 168-69). This comparability strongly suggests that our results do not reflect deficiencies in our measure of academic aptitude, for a battery of five Project Talent ability tests was employed in their analysis. Of course, the Project Talent research design parallels ours in that students were first surveyed in secondary school and subsequently followed through their educational careers. It might also be noted that Spaeth reports a zero-order correlation of .312 between college selectivity and student ability for the relatively few respondents (699) in the 1961 NORC survey of college graduates for whom ability data were available (Spaeth, 1968b). This value also is considerably closer to ours than to Karabel and Astin's, despite its being based on a sample of college seniors.

Returning now to our results for selectivity, we note that three exogenous variables have significant total effects on where the male respondents go to college, the family acquisition index (which might be considered a proxy for family income), measured ability, and, as predicted, the status composition of the high schools attended. All three parameters are roughly comparable and of modest magnitude, ranging from .151 to .196. The parameter for "SES" is somewhat larger, at .203. Appreciating the modesty of these effects, it is apparent that high status background, high ability, and attendance at a socially select secondary school all enhance

the likelihood of attending a relatively select college or university.

The structural equation for college selectivity, which includes senior class standing and curriculum, appears next in Table 2. The sizable parameter for class standing, .269, and corresponding reduction of the ability coefficient, .039, indicate the extent to which the relevance of ability for college selectivity is mediated through high school performance. Interestingly, despite the well-documented importance of college preparatory enrollment for the likelihood of attending college, the curriculum effect on selectivity is negligible.

Two remaining features of the structural selectivity equation deserve special attention. First, high school status context, net of any advantages or disadvantages arising from differences in curriculum enrollment class standing, ability and family background, is as important a direct determinant of where one goes to college as any other variable in the male model, with the exception of class standing. Second, high school ability context, in contrast, has no consequence for access to select colleges.

Whether these secondary school effects derive from differences among the schools themselves in their resources and counseling and educational practices as suggested by Conant, or from the admissions policies of colleges which favor students thought to attend "quality" high schools, or, what is more likely, from some combination of both, it is nevertheless revealing that it is the status composition of high schools rather than their ability levels that affects the sorting of students among colleges. While these effects are admittedly modest and their practical importance

should not be exaggerated, they nevertheless suggest that, all other things being equal, graduation from a socially elite secondary school enhances one's prospects for attending an academically select college, while the academic quality of one's high school, as indexed by the intellectual selectivity of its student body, is essentially irrelevant for where one goes to college.

We might also note that a number of the structural coefficients here are slightly larger than their reduced form counterparts. These arise by virtue of the indirect depressant effects of high school status and ability contexts on college selectivity. The reduced form parameter, it will be recalled, is the "total" effect of a variable, which will necessarily equal the sum of its direct and indirect effects. Youth in schools with high context scores achieve somewhat lower class standing, and high academic standing itself enhances the likelihood of enrollment in a relatively select postsecondary school. The equivalence of "total" and the sum of direct and indirect effects implies, however, that the liability accruing to such youth by virtue of their high school environments must somehow be offset, in this instance by stronger direct positive effects. Hence, were it not for their somewhat lowered class standing, youth in high status secondary schools would evidence an even greater advantage over their counterparts in lower status schools with regard to the likelihood of enrolling in relatively select colleges and universities.

We now review, in somewhat less detail than above, our analysis of college attainments. We will, of course, attend especially to the consequences of institutional selectivity for college outcomes.

Self-reported freshman GPA is significantly affected by only three variables, i.e., ability, class standing and college selectivity.[7] About a third of the ability effect is mediated through high school class standing, which also contributes independently to freshman grade performance. The "unique" effect of high school rank no doubt reflects motivational factors and study habits that are relevant to academic performance in college but are otherwise untapped in our model. The moderate effect of college selectivity on freshman GPA in the structural equation is, of course, negative. This coefficient is comparable in magnitude to those of ability and high school rank and implies that, net of other variables in the analysis, attendance at relatively select institutions tends to depress freshman grade-point averages. Thus, the first proposition of Davis' "frogpond" model again finds support in these data.

Since freshman major is unaffected by any of our institutional variables, we will not dwell on these results, other than to note that no such effects were predicted for this outcome and that, of the other variables in the model, only high school performance and curriculum enrollment are directly related, while academic ability is indirectly related, to preference for "high performance career choices." These results are generally consistent with Davis' (1965).

Despite the limitations of our measure of self-conceptions of academic competance, its dependency upon prior variables is largely as would be anticipated. Academic ability evidences the single largest exogenous influence on self-concept and high school ability and status contexts have modest, offsetting total effects, the former depressant and the latter enhancing.

High school rank also affects self-conceptions and mediates almost half the total effect of ability. Freshman GPA, however, is by far the strongest determinant of self-conceptions in the structural equation, and almost all the effects of prior variables are mediated through this mechanism. Only one other parameter is statistically significant in the structural equation, that of father's occupation (which happens to be negative). Thus, of the measured variables in our model, perceptions of competence appear to be primarily responsive to academic aptitude and demonstrated performance. These results parallel those obtained in our earlier study of high school attainment processes (Alexander and Eckland, 1975a; 1975b).

It is of special interest that the total effect of college selectivity upon self-conceptions of academic competance, though negative, is negligible, at least for men. Although it will be noted shortly that our results are somewhat otherwise for women, at this point we find little support for the "relative deprivation" hypothesis that selectivity affects career preferences indirectly through its immediate consequences for relative academic performance and subsequent implications for self-assessments of capabilities.

Our results for senior or terminal year GPA parallel those obtained at the freshman level. Here too the total effect of college selectivity is negative and of moderate magnitude, -.160. However, most of this effect is mediated through other mechanisms in the model, particularly freshman grades. Thus, it appears that the main impact of selectivity upon performance occurs during the early college years, the period of adjustment

to a new learning environment, and that later performance is largely unaffected by where one goes to college, at least as measured here. This would imply that net of differences in student ability and early performance, average GPA's across institutions should be more comparable for the senior year than for the freshman year. There are a large number of mechanisms by which this could come about, including informal grading practices that recommend leniency for upperclasspersons and the gradual sorting of students into niches commensurate with their competencies over the course of their college careers. While this matter merits additional attention, especially considering current concerns over grade inflation, it cannot be pursued further within the context of the present model.

Only one other point of immediate interest arises from our consideration of the senior year measures, and this pertains to the finding that freshman preference is identified as practically the exclusive determinant of college major (β=.645). Since anticipated major as freshman is unaffected by any of the institutional variables considered in our analysis and freshman performance is not identified as an important determinant of one's actual major, Davis' prediction that select college environments should incline youth toward low performance career choices by depressing grade-point averages is not borne out. Indeed, college selectivity has no relevance, either direct or indirect, for choice of major, which was Davis' primary substantive concern. It should be noted that the strategy employed here has elsewhere been suggested as particularly appropriate for evaluating the propositions of Davis' model (Werts, 1968). Yet,

none of the postulated "frogpond" effects are obtained for men, except for the depressant selectivity effect on freshman GPA. Spaeth (1968b; 1970) obtained comparable results in exploring a number of related issues within a path analytic framework.

Educational attainment is the terminal outcome of our model. Its responsiveness to the entire set of background, high school, and college variables is evaluated. Only two exogenous variables have significant total effects on educational attainment, individual ability, .402, and high school status composition, .152. Thus, high school status context has a modest, though significant, long range impact, and one which is largely independent of all other mechanisms in the model. Expressed in more concrete terms, a one standard deviation increase in high school status composition is "worth" about an additional third of a year of school, net of the other factors considered.

It is also interesting to note that the coefficients for all of the individual SES indicators fall below .100, a commonly employed criterion for identifying substantively interesting effects, and that two of the four are negative. This is consistent with previous findings that status background is not particularly relevant to the educational achievements of male college-goers (Alexander and Eckland, 1974; Sewell and Shah, 1967; Spaeth, 1968b; 1970) and with Wolfle's conclusion (1954) that most of the ascriptive influence of status origins is spent at the high school-college transition.

Both high school and college academic performance are also identified as relevant to continued enrollment. Indeed high school class

standing has a notable direct effect upon level of educational attainment even net of college grades. Only about half of its total effect is mediated through all of the intervening variables in the model.

Finally, we turn to the impact of college selectivity on educational attainment, which has a small but significant total effect of .111. When selectivity's depressant effects on grade-point average and self-conceptions of competance are taken into account, however, its structural or direct effect increases to .152. Increasing the selectivity of where one goes to college by a standard deviation would have the net effect of boosting attainment by about one-fourth of a year, although the direct benefit of such a change would be almost a third of a year. Thus, both high school status composition and college selectivity do appear to be modestly implicated in the educational attainment process; but the advantages or disadvantages deriving from these particular institutional qualities are quite small. In fact, the indirect effect on educational attainment arising from access to academically select colleges provided by previous attendance at more or less socially select secondary schools would be a trivial .02. It is apparent then, for men, that while such institutional contexts may modestly affect selected outcomes in the educational process, including level of attainment itself, their practical importance, with the possible exception of the high school status composition-college selectivity linkage, is slight. In particular, secondary school "quality" (either high or low) does not appear to contribute substantially to the subsequent educational fortunes of college-goers, either directly or through its relevance for their graduates' access to more or

less select colleges and universities.

---Table 3 about here---

The results for our female sample are presented in Table 3, which again reports standardized coefficients. The similarities and differences we will note in comparing Tables 2 and 3 are also reflected in the metric parameters, but these have not been included due to considerations of space. In general, most high school and college variables operate similarly in the two models, and hence will not receive extended consideration. On the other hand, some differences in background effects and estimates of institutional impact are of considerable substantive interest. These will occupy our attention for the remaining discussion.[8]

Differences in the exogenous effects reported in the two tables reflect two particularly important sex differences in regard to the determinants of access to select colleges. First, individual status origins are substantially more strongly implicated in the sorting of women among colleges than is the case for men. This is consistent with our earlier finding (Alexander and Eckland, 1974) that the educational outcomes of women are in general more constrained by status background. In contrast, and unlike our findings for men, women's access to select colleges is not at all affected by their secondary schools' status composition. Thus, Conant's proposition finds no support in the patterns of college attendance for the EEO sample of women, suggesting that the mechanisms by which socially select high schools enhance the educational prospects of their students are in this respect salutary only for men.

Although Conant's hypothesis regarding institutional influences in the transition from high school to college is not borne out for our female

sample, Davis' "frogpond" model fares somewhat better, indeed even better than among males. First, the depressant effect of college selectivity on freshman GPA is somewhat stronger for women than men. Next, as anticipated, the total selectivity effect on self-conceptions of academic competence is negative, and largely mediated through the freshman GPA-self-image linkage. Thus, college selectivity affects academic self-conceptions almost exclusively by depressing relative academic performance. This mediated "frogpond" effect was not obtained for men.

In other respects, however, the results for men and women do correspond. As in the male model, college selectivity modestly depresses the cumulative GPA's of women through its implications for early performance. Additionally, as was the case for men, Davis' primary hypothesis that highly select environments should dissuade youth from pursuing "high performance" majors by virtue of their poorer academic performance in such settings finds no support in the female model.

Finally, we note one last respect in which the male and female models differ. College selectivity is found to be irrelevant to the eventual educational attainments of women, whereas a modest positive effect, consistent with that obtained on previous research with men, was obtained for our male sample. Thus, for women, neither is access to select colleges constrained by the social selectivity of their secondary schools, nor are levels of educational attainment appreciably affected by either the social selectivity of their high schools or the academic selectivity of their colleges. In contrast, the consequences of both school and college contexts for the various social-psychological and performance outcomes

considered in the model appear to be somewhat more pronounced for women than men. The reasons for these sex differences in the effects of institutional contexts certainly merit further attention.

CONCLUSION

This paper has examined several propositions regarding the role of secondary and postsecondary school institutional contexts in the educational attainment process. These propositions were derived from a number of disparate sources: commentaries on changes in the social organization of postsecondary schooling and what these might imply for the importance of variations in school quality for educational attainments; previous studies of college effects upon educational and socioeconomic achievements; Conant's provocative suggestion that a high school's status characteristics may be quite instrumental in affording its graduates access to more or less select colleges and universities; and Davis' relative deprivation, or "frogpond," model of the consequences of attending colleges of varying levels of selectivity.

To pursue the suggestions in this literature regarding the numerous ways in which schools might impinge upon the educational fortunes of their students, a multivariate model of the high school-to-college transition and college attainment process was developed and evaluated. The following specific questions regarding school effects upon college attainments were addressed:

1. Does attendance at a socially select secondary school enhance one's prospects for attendance at an academically select college or university?

2. Assuming such an effect does maintain, what are its implications for one's subsequent educational attainment?

3. Do the consequences of attending postsecondary schools of varying levels of selectivity conform to those postulated in Davis' "frogpond" model?

Although a number of the hypothesized school effects were obtained, they were uniformly modest. Thus, while we would conclude that where one goes to school does make a difference, the difference is hardly sufficient to support indictments against the organization of schooling as constraining educational opportunities or as a very significant conservative force in the status attainment process. With this qualification in mind, we will review the institutional effects in the transition from school to college and in the dynamics of college attainments identified in our analysis.

Consistent with Conant's hypothesis, enrollment in a high status secondary school was found to modestly enhance, at least for boys, the likelihood of enrolling in an academically select college or university. This school effect maintained net of controls on a variety of individual-level student traits, including four indicators of status background and academic ability. A number of these student characteristics were themselves also related to the selectivity of college attended. Contrary to Karabel and Astin's findings, a notable degree of direct status ascription in the high school-college transition was obtained.

College selectivity was itself found to impinge upon a number of later outcomes. As predicted in Davis' "frogpond" model, attendance at select institutions modestly depressed the freshman grade-point averages of both men and women and through this mechanism also indirectly depressed

female self-conceptions of academic competence and, for both sexes, cumulative grade-point averages; however, the preference for "high performance career choices" was unaffected by institutional selectivity. Thus, Davis' expectation that highly competitive environments should lower career goals was not borne out.

Finally, despite these various liabilities of attending select colleges, men at such institutions nevertheless achieved somewhat higher levels of educational attainment; however the attainment advantage thus accruing to students by virtue of their high school's ability to situate its graduates in select colleges and universities was trivial. Thus, although the linkage between socially select high schools and academically select colleges hypothesized by Conant was observed, the consequences he envisioned of that linkage were not especially reflected in the educational careers of the youth in our sample. Moreover, college selectivity in fact had no effect on the educational attainment of women.

While a number of interesting institutional effects in the educational attainment process have been identified in this study, numerous issues still remain unanswered. How, for example, do socially select secondary schools actually contribute to the likelihood that their graduates will attend academically select colleges? Through their normative climates and organizational structures as suggested earlier? Of course, the specific dimensions of such constructs must be identified and evaluated before any more specific interpretation can be given for the institutional effects documented in this study. Similarly, how do academically select colleges and universities promote high retention rates and the later

success of their graduates? While such questions certainly deserve consideration, it is unlikely that their pursuit will unearth dramatic school effects. This conclusion is consistent with our own inquiry as well as with the now voluminous literature on institutional impact in the educational attainment process.

Footnotes

1. Spaeth's study (1968a) of undergraduate selectivity and access to select graduate training institutions is one exception.

2. While almost every school input and outcome considered thus far in the school effects literature evidences substantially greater within school than between school variance, the between school variance in social status background is consistently large relative to that of other variables. See, for example, Heyns (1974), Hauser, Sewell, and Alwin (1976), and Hauser (1971).

3. Hauser (1971) demonstrates the rather close correspondence between community status characteristics and those of the students attending school within them.

4. McDill and his colleagues (McDill and Rigsby, 1973), for example, obtained a strong zero-order correlation (.508) between a measure of status composition (percent of students in the high school whose fathers had at least some college) and their measure of institutional "academic emulation" - the first of their six factors characterizing high school normative climates (personal communication).

5. We have also considered other high school variables for inclusion in this model, such as educational expectations, friends' college plans, and parental and teacher encouragement for college. In general, these variables contributed little to the college attainment model and had no effect upon our conclusions regarding institutional contexts.

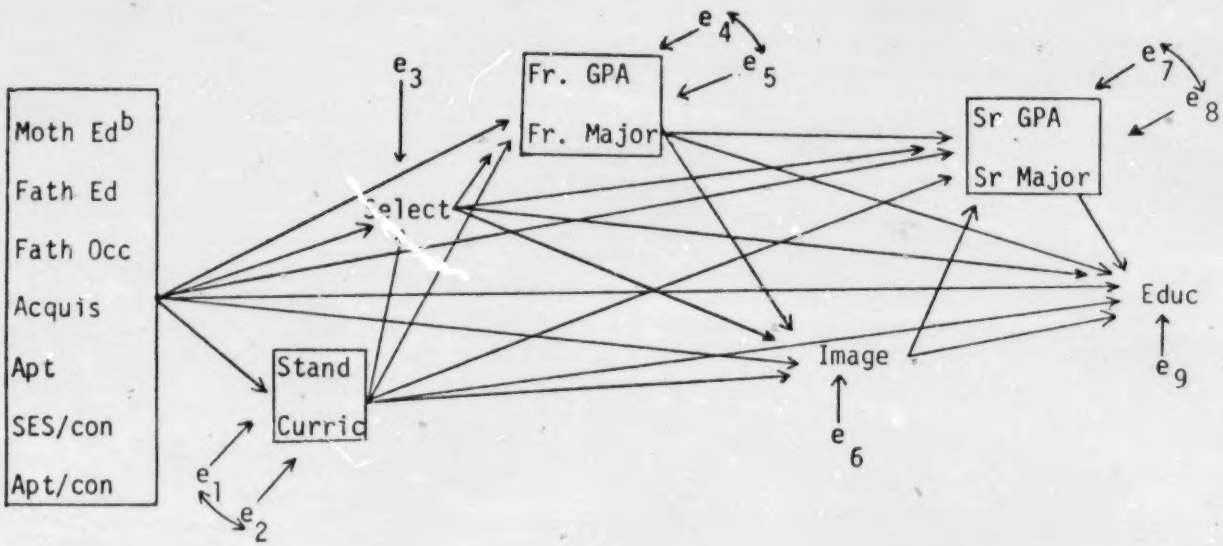
6. See Spaeth (1968b; 1970) for related models of college attainment processes.

7. The explanatory power of our model for the various college variables is uniformly modest, except in those instances in which a terminal year outcome is regressed upon its freshman year counterpart. Spaeth's results (1968b; 1970) were similar in this regard. In part, this reflects the greater homogeneity of college-goers relative to representative samples of high school populations on many of the characteristics most pertinent to educational attainments (e.g., academic ability; goal orientations; performance).

8. It would also be of interest to compare "residual" sex differences in the various school process and attainment outcomes of the model. However, the significant sex interactions that dictated estimation of the high school-to-college transition model separately for men and women complicate this task somewhat. Such deviations from additivity imply that the adjusted differences between the sexes on a given outcome will not be uniform at every point of comparison. This, of course, is the basis of textbook proscriptions against interpreting differences in intercepts in covariance analysis when the condition of homogeneity of regression is not satisfied. Consider, for example, sex differences in levels of educational attainment. The male and female intercepts for the full structural model are 10.6 and 11.5, implying that after adjustment for the effects of all other independent variables women actually evidence about a year's educational advantage over men. However, the levels of educational attainment estimated for men and

women when the other independent variables are at their minimum observed values are essentially identical, at 12.4 and 12.5 respectively. These would be the estimated intercepts were the other regressors re-scaled to a substantively meaningful zero point as suggested by Althauser and Wigler (1972). Finally, when all regressors are at their maximum observed values the estimates of male and female educational attainment are 20.8 and 17.2 years respectively, implying a substantial female "deficit" of 3.6 years. Clearly, then, an adequate consideration of such residual sex differences would require extended discussion and substantial additional analysis. Despite our own interest in these matters, their pursuit at this point would constitute an unwarrented digression from the immediate substantive concerns of this report.

Figure 1. Structural Model of the High School-to-College Transition and College Attainments[a]



a) Variables at a given level or stage of the model have been "blocked" for ease of presentation. The model is actually fully recursive and all implied effects will be estimated. All exogenous variables are freely intercorrelated.

b) The following variable abbreviations are used throughout: "Moth Ed," Mother's Education; "Fath Ed," Father's Education; "Fath Occ," Father's Occupation; "Acquis," Acquisition Index; "Sex," Sex; "Apt," Academic Aptitude; "SES/Con," High School Status Composition; "Apt/Con," High School Aptitude Composition; "Stand," High School Class Standing; "Curric," High School Curriculum Enrollment; "Fr" and "Sr GPA," Freshman Year GPA and Cumulative GPA; "Fr" and "Sr Major," Freshman Year Major Preference and Terminal Year Major; "Image," Self-Conceptions of Academic Competence; "Educ," Level of Educational Attainment; "Select," College Selectivity.

Table 1. The Distribution of High School Averages on Selectivity and Educational Attainment (N=42)

		Range of Selectivity Scores							
		35	36-38	39-41	42-44	45-47	48-50	51-53	54-56
No. of Schools		2	2	5	10	8	7	4	4
School S.D.	4.8								
Student S.D.	9.9								

		Range of Educational Attainments (expressed in years)							
		14-14.5	14.6-14.9	15-15.5	15.6-15.9	16-16.5	16.6-16.9	17-17.5	17.6-17.9
No. of Schools	4	2	13	7	14	1	0	1	
School S.D.	.51								
Student S.D.	1.88								

Table 2. Standardized Parameters for the EEO Model of the High School to College Transition and College Attainment Process, for Males (N=356)[a]

D.V.	Moth Ed	Fath Ed	Acquis	Fath Occ	SES[b]	Apt	Apt Con	SES Con
Curric	.068	.035	.119*	.172	.252	.256*	.022	.069
Stand	-.002	.024	.027	-.034	.039	.510*	-.114	-.082
Select	.075	-.053	.151*	.067	.203	.196*	.034	.167*
Select	.070	-.062	.135*	.068	.182	.039	.063	.183*
Fr.GPA	-.078	.126	-.082	-.059	-.131	.317*	-.163*	.074
Fr.GPA	-.073	.123	-.079	-.043	-.120	.231*	-.138	.096
Fr.GPA	-.058	.110	-.051	-.029	-.093	.239*	-.125	.133
Fr.Maj. ...	-.053	.105	-.021	-.018	-.081	.243*	-.044	.049
Fr.Maj. ...	-.065	.093	-.049	-.031	-.089	.082	-.023	.055
Fr.Maj. ...	-.073	.100	-.063	-.038	-.105	.077	-.030	.035
Image	.024	-.051	-.031	-.126*	-.163	.188*	-.152*	.157*
Image	.021	-.057	-.042	-.127*	-.176	.096	-.136	.166*
Image	.023	-.059	-.037	-.125*	-.172	.098	-.134	.173*
Image	.041	-.096	-.021	-.116*	-.177	.007	-.085	.121
Sr.GPA	-.037	.050	-.132*	.001	-.133	.324*	-.127	.040
Sr.GPA	-.039	.043	-.143*	.003	-.145	.211*	-.105	.053
Sr.GPA	-.028	.033	-.122*	.014	-.119	.217*	-.095	.082
Sr.GPA	.001	-.024	-.096	.028	-.100	.082	-.023	.006
Sr.GPA	-.005	-.010	-.093	.045	-.092	.081	-.011	-.011
Sr.Maj. ...	.004	.063	-.005	.012	.070	.153*	-.044	.066
Sr.Maj. ...	-.002	.058	-.017	.007	.055	.078	-.033	.069
Sr.Maj. ...	-.005	.062	-.024	.003	.054	.076	-.037	.059
Sr.Maj. ...	.044	-.009	.019	.029	.065	.008	-.008	.026
Sr.Maj. ...	.040	.000	.021	.039	.076	.007	.000	.014
Educ.	-.026	.073	-.084	.090	-.122	.402*	-.113	.152*
Educ.	-.034	.063	-.104	.085	-.123	.250*	-.088	.164*
Educ.	-.041	.070	-.119*	.078	-.131	.245*	-.095	.143*
Educ.	-.023	.039	-.103	.087	-.115	.190*	-.067	.113
Educ.	-.024	.042	-.103	.091	-.118	.190*	-.064	.109
Educ.	-.026	.045	-.076	.074	-.096	.165*	-.061	.111
Mean	11.688	11.441	.398	46.728	--	9.461	7.193	3.397
SD	2.697	3.772	.819	22.081	--	4.080	1.043	.583

a) Coefficients at least twice their standard error are identified by an asterisk. See note to Figure 1 for variable abbreviations.

b) The "SES" parameters represent the aggregated effects of the four status background indicators: father's and mother's education, father's occupation, and the acquisition index. Signs for the SES parameters are implied by the disaggregated Betas and correlations among indicators. No significance tests are available for these coefficients, but effects of .15 or greater may be considered worthy of note.

Table 2. (Continued)

D.V.	Stand	Curric	Select	Fr Maj	Fr GPA	Image	Sr Maj	Sr GPA	Educ	R^2
Curric										.197
Stand										.250
Select										.179
Select	.269*	.076								.244
Fr.GPA										.109
Fr.GPA	.206*	-.076								.141
Fr.GPA	.261*	-.060	-.204*							.173
Fr.Maj										.071
Fr.Maj	.225*	.181*								.147
Fr.Maj	.195*	.173*	.109							.156
Image										.054
Image	.151*	.058								.076
Image	.161*	.061	-.038							.078
Image	.070	.098	.053	-.074	.405*					.220
Sr.GPA										.103
Sr.GPA	.199*	.044								.137
Sr.GPA	.242*	.056	-.160*							.156
Sr.GPA	.103*	.105*	-.031	-.077	.591*					.453
Sr.GPA	.093	.091	-.038	-.066	.533*	.144*				.469
Sr.Maj										.038
Sr.Maj	.107	.078								.053
Sr.Maj	.092	.074	.056							.056
Sr.Maj	-.051	-.026	.007	.611*	.088					.374
Sr.Maj	-.057	-.035	.002	.618*	.050	.093				.381
Educ.										.198
Educ.	.240*	.117*								.260
Educ.	.210*	.109*	.111*							.270
Educ.	.140*	.105*	.142*	.092	.201*					.309
Educ.	.137*	.101	.140*	.094	.187*	.035				.310
Educ.	.113*	.076	.152*	.066	.020	-.017	.079	.307*		.362
Mean	2.545	.668	49.067	.632	4.236	.282	.559	4.656	16.480	
SD	1.245	.471	9.890	.483	2.139	.571	.497	1.673	2.036	

Table 3. Standardized Parameters for the EEO Model of the High School to College Transition and College Attainment Process, for Females (N=274)[a]

D.V.	Moth Ed	Fath Ed	Acquis	Fath Occ	SES[b]	Apt	Apt Con	SES Con
Curric	-.062	.168*	.091	-.003	.203	.164*	.102	.200*
Stand	-.011	.191*	-.042	-.160*	-.143	.511*	-.173*	-.021
Select	.039	.198*	.221*	.079	.437	.179*	.060	-.019
Select	.048	.148	.218*	.106	.416	.077	.079	-.036
Fr.GPA	-.053	-.047	-.075	-.013	-.149	.276*	-.044	.051
Fr.GPA	-.054	-.087	-.059	.027	-.148	.156*	.005	.066
Fr.GPA	-.038	-.039	.011	.062	.058	.181*	.030	.054
Fr.Maj. ...	-.080	.099	.060	.071	.168	.248*	-.010	-.007
Fr.Maj. ...	-.081	.096	.066	.078	.174	.230*	.002	.001
Fr.Maj. ...	-.087	.079	.040	.066	.137	.221*	-.007	.005
Image	-.049	-.052	.036	-.031	-.093	.283*	-.055	.165
Image	-.051	-.099	.055	.019	-.100	.136	.006	.186*
Image	-.039	-.064	.107	.044	-.097	.154*	.025	.178*
Image	-.018	-.051	.100	.013	-.084	.061	.012	.153*
Sr.GPA	-.027	-.006	.027	-.039	-.051	.248*	-.010	.048
Sr.GPA	-.028	-.042	.043	.000	-.051	.135	.038	.065
Sr.GPA	-.018	-.010	.090	.023	.089	.152*	.054	.057
Sr.GPA	.007	.018	.083	-.018	.091	.031	.034	.019
Sr.GPA	.010	.028	.065	-.021	.080	.020	.031	-.009
Sr.Maj. ...	-.015	.182*	.001	-.056	.146	.276*	-.020	.077
Sr.Maj. ...	-.017	.194*	.001	-.063	.154	.303*	-.026	.080
Sr.Maj. ...	-.022	.177*	-.023	-.075	.125	.294*	-.035	.084
Sr.Maj. ...	.038	.127	-.051	-.123*	-.113	.136*	-.032	.077
Sr.Maj. ...	.038	.128	-.054	-.123*	-.114	.134*	-.032	.073
Educ.	.085	.166	-.042	-.092	.160	.186*	-.027	.105
Educ.	.094	.096	-.041	-.049	.125	.031	.008	.088
Educ.	.096	.102	-.033	-.045	.134	.034	.011	.087
Educ.	.103	.102	-.035	-.053	.138	.010	.008	.082
Educ.	.104	.104	-.039	-.053	.138	.007	.008	.075
Educ.	.104	.107	-.061	-.058	.135	.013	-.003	.083
Mean	12.500	12.398	.587	50.380	--	9.818	7.243	3.438
SD	2.655	3.952	.838	23.680	--	4.293	.972	.528

a) Coefficients at least twice their standard error are identified by an asterisk. See note to Figure 1 for variable abbreviations.

b) The "SES" parameters represent the aggregated effects of the four status background indicators: father's and mother's education, father's occupation, and the acquisition index. Signs for the SES parameters are implied by the disaggregated Betas and correlations among indicators. No significance tests are available for these coefficients, but effects of .15 or greater may be considered worthy of note.

Table 3. (Continued)

O.V.	Stand	Curric	Select	Fr Maj	Fr GPA	Image	Sr Maj	Sr GPA	Educ	R^2
Curric.....										.191
Stand										.291
Select										.248
Select	.167*	.104								.279
Fr.GPA										.084
Fr.GPA	.251*	-.051								.129
Fr.GPA	.306*	-.017	-.324*							.205
Fr.Maj										.093
Fr.Maj	.047	-.036								.095
Fr.Maj	.028	-.048	.115							.105
Image										.093
Image	.313*	-.073								.163
Image	.353*	-.048	-.237*							.204
Image	.215*	-.038	-.099	.055	.445*					.368
Sr.GPA										.062
Sr.GPA	.242*	-.060								.104
Sr.GPA	.278*	-.038	-.218*							.138
Sr.GPA	.067	-.026	.010	-.021	.694*					.519
Sr.GPA	.027	-.019	.028	-.031	.611*	.186*				.541
Sr.Maj										.117
Sr.Maj	-.045	-.021								.119
Sr.Maj	-.064	-.033	.112							.128
Sr.Maj	-.100	-.000	.052	.672*	.055					.541
Sr.Maj	-.106	.001	.055	.671*	.043	.028				.542
Educ.										.083
Educ.	.268*	.113								.148
Educ.	.275*	.117	-.040							.149
Educ.	.247*	.120	-.015	.034	.090					.157
Educ.	.237*	.122	-.011	.032	.071	.043				.159
Educ.	.221*	.127*	-.014	.095	-.093	-.006	-.081	.275*		.197
Mean	3.299	.744	48.281	.387	5.069	.365	.409	5.407	15.690	
SD	.940	.437	9.875	.488	2.050	.640	.492	1.829	1.530	

References

Alexander, K. L., and B. K. Eckland

1973 Effects of Education on the Social Mobility of High School Sophomores Fifteen Years Later (1955-1970). Chapel Hill, N.C.: Final Report, U. S. Office of Education, Project No. 10202 (OEE - 4-71-0037).

Alexander, K. L., and B. K. Eckland

1974 "Sex Differences in the Educational Attainment Process." American Sociological Review, 39(October): 668-81.

Alexander, K. L., and B. K. Eckland

1975a "Contextual Effects in the High School Attainment Process." American Sociological Review, 40(June): 402-16.

Alexander, K. L., and B. K. Eckland

1975b "School Experience and Status Attainment." Pp. 171-210 in S. D. Dragastin and G. H. Elder, Jr. (eds.), Adolescence In the Life Cycle: Psychological Change and Social Context. Washington, D. C.: Hemisphere Publishing Corporation.

Alexander, K. L., and E. L. McDill

1976 "Selection and Allocation Within Schools: Some Causes and Consequences of Curriculum Placement." American Sociological Review, forthcoming.

Althauser, R. P., and M. Wigler

1972 "Standardization and Component Analysis." Sociological Methods and Research, 1(August): 97-135.

Alwin, D. F.

1974 "College Effects on Educational and Occupational Attainments." American Sociological Review, 39(April): 210-23.

Alwin, D. F. and R. M. Hauser

1975 "The Decomposition of Effects in Path Analysis." American Sociological Review, 40(February): 37-47.

American College Testing Program

1972 Assessing Students on the Way to College. Iowa City, Iowa: The American College Testing Program.

Astin, A. W.

1965 Who Goes Where to College? Chicago: Social Science Research Associates, Inc.

Clark, B.

1960 "The 'Cooling Out' Function in Higher Education." American Journal of Sociology, 65(May): 569-76.

Conant, J. B.

1961 Slums and Suburbs. New York: McGraw-Hill.

Davis, J. A.

1965 Undergraduate Career Decisions: Correlates of Occupational Choice. Chicago: Aldine Publishing Company.

Davis, J. A.

1966 "The Campus as a 'Frog Pond'." American Journal of Sociology, 72(July): 17-31.

Drew, D. E., and A. W. Astin

1972 "Undergraduate Aspirations: A Test of Several Theories." American Journal of Sociology, 77(May): 1151-64.

Duncan, O. D.

1966 "Path Analysis: Sociological Examples." American Journal of Sociology, 72(July): 1-16.

Duncan, O. D.

1975 Introduction to Structural Equation Models. New York: Academic Press.

Eckland, B. K., and L. MacGillivray

1972 "School Profiles: Working Paper No. 1." Chapel Hill, N. C.: Institute for Research in Social Science.

Feldman, K. A., and T. H. Newcomb

1969 The Impact of College on Students, Vols. I and II. San Francisco: Jossey-Bass, Inc.

Finney, J. M.

1972 "Indirect Effects in Path Analysis." Sociological Methods and Research, 1(November): 175-86.

Folger, J. K., H. S. Astin, and A. E. Bayer

1970 Human Resources and Higher Education. New York: Russell Sage Foundation.

Hauser, R. M.

1971 Socioeconomic Background and Educational Performance. Washington, D. C.: American Sociological Association, Arnold M. and Caroline Rose Monograph Series.

Hauser, R. M., W. H. Sewell, and D. F. Alwin

1976 High School Effects on Achievement. Pp. in W. H. Sewell, R. M. Hauser, and D. L. Featherman, Schooling and Achievement in American Society. New York: Academic Press.

Heise, D. R.

1969 "Problems in Path Analysis and Causal Inference." Pp. 38-73 in E. F. Borgatta (ed.), Sociological Methodology, 1969. San Francisco: Jossey-Bass.

Heise, D. R.

1972 "Employing Nominal Variables, Induced Variables, and Block Variables in Path Analysis." Sociological Methods and Research, 1(November): 147-3.

Heyns, B.

1974 "Social Selection and Stratification Within Schools." American Journal of Sociology, 79(May): 1434-51.

Karabel, J.

1972 "Community Colleges and Social Stratification." Harvard Educational Review, 42(November): 521-62.

Karabel, J., and A. W. Astin

1975 "Social Class, Academic Ability, and College 'Quality'." Social Forces, 53(March): 381-98.

Land, K. C.

1969 "Principles of Path Analysis." Pp. 3-37 in E. F. Borgatta (ed.), Sociological Methodology, 1969. San Francisco: Jossey-Bass.

Lewis-Beck, M. S.

1974 "Determining the Importance of an Independent Variable: a Path Analytic Solution." Social Science Research, 3(June): 95-107.

Maxwell, A. E.

1971 "Estimating True Scores and Their Reliabilities in the Case of Composite Psychological Tests." British Journal Mathematical and Statistical Psychology, 24: 195-204.

McDill, E. L., and L. C. Rigsby

1973 Structure and Process in Secondary Schools: The Impact of Educational Climates. Baltimore: The Johns Hopkins University Press.

Meyer, J. H.

1970 "High School Effects on College Intentions." American Journal of Sociology, 76(July): 59-70.

Nelson, J. I.

1972 "High school Context and College Plans: the Impact of Social Structure on Aspiration." American Sociological Review, 37(April): 143-8.

Reitz, J. G.

1975 "Undergraduate Aspirations and Career Choice: The Effects of College Selectivity." Sociology of Education 48 (Summer): 308-23.

Sewell, W., and R. M. Hauser

1975 Education, Occupation, and Earnings. New York: Academic Press.

Sewell, W. H., and V. P. Shah

1967 "Socioeconomic Status, Intelligence, and the Attainment of Higher Education." Sociology of Education, 40(Winter): 1-23.

Sharp, L. M.

1970 Education and Employment. Baltimore: The Johns Hopkins University Press.

Solmon, L. C., and P. J. Taubman (eds.)

1973 Does College Matter? Some Evidence on the Impacts of Higher Education. New York: Academic Press.

Solmon, L. C., and P. Wachtel

1975 "The Effects on Income of Type of College Attended." Sociology of Education, 48(Winter): 75-90.

Spaeth, J. L.

1968a "The Allocation of College Graduates to Graduate and Professional Schools." Sociology of Education, 41(Fall): 342-9.

Spaeth, J. L.

1968b "Occupational Prestige Expectations Among Male College Graduates." American Journal of Sociology, 73(March): 548-58.

Spaeth, J. L.

1970 "Occupational Attainment among Male College Graduates." American Journal of Sociology, 75(January): 632-44.

Stice, G., and R. B. Ekstrom

1964 High School Attrition. Princeton, N. J.: Educational Testing Service.

State Council of Higher Education for Virginia

1966 Student Admissions: Virginia State-Controlled Institutions of Higher Education/Fall 1966. Richmond, Virginia: State Council of Higher Education for Virginia.

Wegner, E. L., and W. H. Sewell

1970 "Selection and Context as Factors Affecting the Probability of Graduation from College." American Journal of Sociology, 75(January): 665-79.

Werts, C. E.

1968 "Path Analysis: Testimony of a Proselyte." American Journal of Sociology, 73(January): 509-12.

Werts, C. E., and D. J. Watley

1969 "A Student's Dilemma: Big Fish-Little Pond or Little Fish-Big Pond." Journal of Counseling Psychology, 16(January): 14-19.

Wolfle, D.

1954 America's Resources of Specialized Talent. New York: Harper and Brothers.